Invasive Species: Earthworms

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Invasive species are an important challenge facing land managers, both today and into the foreseeable future. To most people, however, invasive species means just weedy plants or pest insects. Examples that would immediately spring to mind would be kudzu or fire ants. With a little thought, other plants and insects would arise, likely privet, gypsy moth, or the hemlock wooly adelgid. These plants and insects garner the most attention because they have dramatic and visible effects on the landscape. Nevertheless, other lower-profile organisms are invading forested lands across North America that can have equally dramatic consequences for impacted ecosystems. This invasion escapes the notice of land managers because it happens out of sight, under cover of fallen leaves; but it is right under your foot. These stealthy invaders are EARTHWORMS. That's right: your local bait shop is every bit as cosmopolitan as the Upper East Side of Manhattan, featuring visitors from Europe, Africa, and Asia, all available for purchase on any given day. Not surprisingly, these bait worms are constantly being introduced to lakeside and riverside habitats everywhere. But that's not the only mode of invasion. Massive quantities of soil move to and fro in the horticulture business, and most of that soil contains what?? EARTHWORMS! Long recognized as movers and shakers in the soil world, earthworms influence practically every aspect of soil quality (function) with their myriad physical, biological and chemical effects on soil processes. The reason we are concerned about introduced exotic earthworms is that not all species behave similar to natives, nor do they influence soils in the same or equally positive ways. For example, certain worms that have been introduced into hardwood forests in the upper Midwestern states can completely consume the leaf litter layer in a short period of time, altering or eliminating habitat for dozens of other plant and animal species. Solutions to the problem of earthworm invasion are not straightforward for many reasons. Because the public generally perceives earthworms to be "good" for soil, the distinction between good and bad worms is difficult to get across. The invasion usually lacks a striking visual impact, so it is difficult to convince people that it is important to control invasive exotic earthworms. Finally, the vectors by which the worms are introduced involve commercial interests and the regulation of worms (or material that may contain worms) potentially has negative economic consequences. Mac Callaham, Research Ecologist with RWU-4104, and colleagues from an international working group are working together to explore the possible approaches that policymakers, regulators, and managers could take that would most effectively address the problem of earthworm introductions. The group has a series of papers currently in review that will appear as a special feature in the journal Biological Invasions later this year.


The native earthworm (*Diploardia longa*) collected near Macon, GA.